



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/833,030	04/10/2001	Laszlo Hevesi	VANM215.001AUS	8359
20995	7590	05/19/2004	EXAMINER	
KNOBBE MARTENS OLSON & BEAR LLP			TRAN, MY CHAU T	
2040 MAIN STREET			ART UNIT	
FOURTEENTH FLOOR			PAPER NUMBER	
IRVINE, CA 92614			1639	

DATE MAILED: 05/19/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/833,030

Applicant(s)

HEVESI ET AL.

Examiner

MY-CHAU T TRAN

Art Unit

1639

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 February 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2,5-7 and 10-13 is/are pending in the application.
- 4a) Of the above claim(s) 11 and 12 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 2,5-7 and 10-13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 September 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Status of Claims

1. Applicant's amendment filed 2/9/04 is acknowledged and entered. Claims 3-4, and 8-9 have been canceled. Claims 2, 10, and 13 have been amended.
2. Claim 1 is canceled by the amendment filed on 9/13/02.
3. Claims 2, 5-7, 10-13 are pending.
4. This application claims foreign priority to an EPO application 00870184.9 filed 9/1/00.

Election/Restrictions

5. Claims 11-12 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected *inventions*, there being no allowable generic or linking claim. Election was made **without** traverse in Paper filed 2/19/02.
6. This application contains claims 11-12 are drawn to an invention nonelected with traverse in Paper filed 2/19/02. A complete reply to the final rejection must include cancellation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01.
7. Claims 2, 5-7, 10, and 13 are treated on the merit in this Office Action.

Withdrawn Objections and /or Rejections

8. In view of applicant's amendments of claim 13, the previous objection has been withdrawn.

9. In view of applicant's amendments of claim 2, the previous rejections under 35 USC 112, second paragraph, have been withdrawn.

10. In view of applicant's amendments of claims 2, 10, and 13, and cancellation of claims 3-4, and 8-9, the rejection of claims 2, 5-10, and 13 under 35 USC 102(e) as anticipated by Wagner et al. (US Patent 6,329,209 B1) has been withdrawn.

11. In view of applicant's amendments of claims 2, 10, and 13, and cancellation of claims 3-4, and 8-9, the rejection of claims 2-4 under 35 USC 103(a) as being obvious over Wagner et al. (US Patent 6,329,209 B1) and Barner et al. (US Patent 5,986,066) has been withdrawn.

12. In view of applicant's amendments of claims 2, 10, and 13, and cancellation of claims 3-4, and 8-9, the rejection of claims 2-10 and 13 under 35 USC 103(a) as being obvious over Barner et al. (US Patent 5,986,066) in view of either Weetall (*Applied Biochemistry and Technology*, 41:157-188, 1993) or Sundberg et al. (US Patent 5,624,711) has been withdrawn.

New Rejections – Necessitated by Amendment

Claim Rejections - 35 USC § 103

13. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

14. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

15. Claims 2, 5-7, 10, and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sundberg et al. (US Patent 5,624,711), Barner et al. (US Patent 5,986,066), and MacBeath et al. (*Science*, 9/8/2000, 289:1760-1763).

Sundberg et al. disclosed a microarray and method of making the microarray wherein the solid support have an aldehyde as a functional group for the immobilization of biological or chemical molecules (Sundberg et al.: fig. 8). The solid support is glass (Sundberg: Fig. 8-11; col. 11, line 10). Sundberg et al. disclose several methods of derivatizing the support to produce reactive functional sites for the immobilization of biological or chemical molecules (col. 10, line

Art Unit: 1639

55 to col. 12, line 4). The immobilization of the biological or chemical molecules on a solid support results in an array with discrete regions (Sundberg: col. 6, lines 18-35). Sundberg et al. further disclose several methods of immobilizing the biological or chemical molecules onto a solid support (col. 6 thru col. 8, lines 1-55). The biological molecules include proteins, peptides, and nucleic acids (col. 4, lines 51-56). One such method is the spotting method wherein "a dispenser (an arrayer) moves from region to region, depositing only as much monomer as necessary at each stop. Typical dispensers include a micropipette to deliver the monomer solution to the substrate and a robotic system to control the position of the micropipette with respect to the substrate, or an ink-jet printer" (Sundberg: col. 8, lines 9-14).

The density of biological molecules fixed on the surface of the support (i.e. at least 220 fmole of DNA molecules/cm²) is would be a choice of experimental design and is considered within the purview of the cited prior art. Furthermore, MacBeath et al. disclose using robotic systems from Affymetric (pg. 1763, reference #10) for high precision contact-printing robot to deliver nanoliter volumes of samples to the slides to yields spots about 150 to 200 μ m in diameter (16000 spots per square centimer) (pg. 1760, right col.). Thus the density of the biological molecules fixed on the surface of the support would be the type design in which the robotic system would delivery the biological molecules onto the support.

The method of Sundberg et al. does not expressly include the method step of oxidizing the surface of the support to produce an aldehyde as a functional group.

Barner et al. teaches a method of oxidizing octenyl trichlorosilane, an olefin on a solid surface, with permanganate and periodate to form a functional group for immobilizing a protein (col. 8, lines 36-47; col. 3, lines 60-65). The immobilization of the biological or chemical

Art Unit: 1639

molecules on a solid support results in an array with discrete regions (col. 2, lines 6-17; fig. 1-3). The biological molecules include DNA molecules, proteins, and antibodies (col. 3, line 17 to col. 4, line 18).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to include the method step of oxidizing the surface of the support to produce an aldehyde as a functional group as taught by Barner et al. in the method of Sundberg et al. One of ordinary skill in the art would have been motivated to include the method step of oxidizing the surface of the support to produce an aldehyde as a functional group in the method of Sundberg et al. because it is well known that any suitable functional group such as an aldehyde, a carboxylic acid or amine can be use for the immobilization of biological or chemical molecules (Sundberg et al.: Fig. 8-11; col. 2, line 19-24; col. 16, lines 32-37; col.3, lines 60-65). Therefore, it would have been an obvious matter of design choice to have an aldehyde functional group rather than a carboxylic acid group (Barner et al.). This is particularly true since in the Barner et al. process it would be expected that the octenyl group would first be oxidized to an aldehyde and then further oxidized to the carboxylic acid. Since applicant has not disclosed that the aldehyde functional group solves any stated problem or is for any particular purpose, it appears that the invention would perform equally well with either an aldehyde or a carboxylic acid as a functional group. Furthermore, one of ordinary skill in the art would have reasonably expectation of success in the combination of because.

Conclusion

Art Unit: 1639

16. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MY-CHAU T TRAN whose telephone number is 571-272-0810. The examiner can normally be reached on Mon.: 8:00-2:30; Tues.-Thurs.: 7:30-5:00; Fri.: 8:00-3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, ANDREW WANG can be reached on 571-272-0811. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 1639

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

mct
May 14, 2004


PADMASHRI PONNALURI
PRIMARY EXAMINER